COAL MINING

January, 1956

Volume 33, No. 1

POWER!

Tremendous smooth power . . . these 3 words accurately describe new Michigan 175A Tractor Shovels now smashing production records at leading mines.

The Michigan 175A is the biggest, most powerful, fastest rubber-tired tractor shovel ever built. Torque Converter and Power Shift Transmission are standard equipment. No engine clutch! 4-wheel power brakes have dual pedals for right or left foot operation.

2 large double-acting hydraulic boom cylinders on the Model 175A provide ample power to hoist 15,000 lb. loads. And—the Michigan gets its famous break-out digging action from 2 large double-acting bucket cylinders.

Ask your Highway representative today for full data on the new Michigans. He'll be glad to tell you how you, too, can speed up production . . . cut costs . . . increase profits.

AA-2051

Michigan 175A with 2¼ yd. bucket at Pilgrim Coal Co. Volant, Pa.

4

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ALLIS-CHALMERS • GENERAL MOTORS DIESEL ENGINES
MASTER • INTERNATIONAL VIBRO-TAMPERS • JAEGER
MICHIGAN TRACTOR SHOVELS AND EXCAVATOR-CRANES
POWER-PACK CONVEYORS • GAR WOOD • ERIE BINS
LIMA SHOVELS, CRANES, DRAGLINES • THOR

"EUCS" ARE THE PACE SETTERS for PROFITS

For open pit mining operations, quarries, off-the-highway construction and industrial jobs, Euclids rate high in keeping hauling costs low. The simple, rugged construction and long life of "Eucs" make them first choice of many leading mine operators and contractors.

Rear-Dump Euclids, of 15 to 30-ton payload capacities, have body designs for low cost hauling of all types of materials. Their rugged construction withstands the impacts of loading heavy excavation and hauling over rough roads. Unmatched for efficiency on haul road and dump... low maintenance costs ... large tires for excellent traction and flotation... wide range of travel speeds up to 35.4 m.p.h.... powered by Diesel engine up to 275 h.p. rating.

Engineered and built as a complete unit, Euclid Bottom-Dump Coal Haulers have proper weight distribution, tremendous power and ease of handling. Short wheelbase of tractor and the universal hitch design permit short turns in narrow cuts. Adjustable form fitting seat affords good driver comfort... powered by Diesel engines up to 275 h.p. rating ... loaded speeds up to 32.3 m.p.h.... available in 20 to 40-ton payload capacities.

THE EUCLID ROAD MACHINERY CO. CLEVELAND 17, OHIO

Euclid Equipment

FOR MOVING EARTH, ROCK, COAL AND ORE

Lowest cost per ton

Self-propelled from hole to hole

Heavy-Rugged-Powerful

● Delivering 250 to 300 tons of coal per day using 36-inch diameter, 6-foot-long augers, the Model 6 McCarthy Coal Recovery Drill lowers your costs per ton and total operating costs. Shorter in length—only 18′ by 6′ wide—the Model 6 operates easily in narrow strip pits or where operators are "facing-off" hillsides for auger boring. The self-propelled drill moves quickly from hole to hole, carrying the same rugged power as the Model 12 and 14 McCarthy Drills.

HYDRAULICALLY OPERATED

LEVELING JACKS **AUGER LIFT** **MOVING JACKS**

AUGER GUIDE **AUGER FEED**

Let us check your property to recommend the right McCarthy Coal Recovery Drill for maximum tonnage at lowest cost. Send for Bul. M-101. The Salem Tool Company, Salem, Ohio.

THE SALEM TOOL COMPANY SALEM SALEM, OHIO, U. S. A.

MODEL 6-30-36 x 6 McCARTHY COAL RECOVERY DRILL with G.M.C. 4-cylinder diesel engine, FAU Cotta transmission, 14" Rockford Clutch, speed reducer and box-type main frame and engine base. Sizes available for using 20, 24, 30, 36 and 42" diameter augers.

THE SALEM TOOL COMPANY

SOUTH ELLSWORTH AVE. • SALEM, OHIO, U. S. A.

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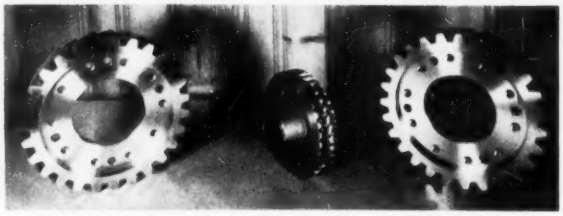

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U.S.B.M. APPROVED PORTABLE PUMP

70 G. P. M. 20 Ft. T. D. H.

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Overall Length, 30" & 50"

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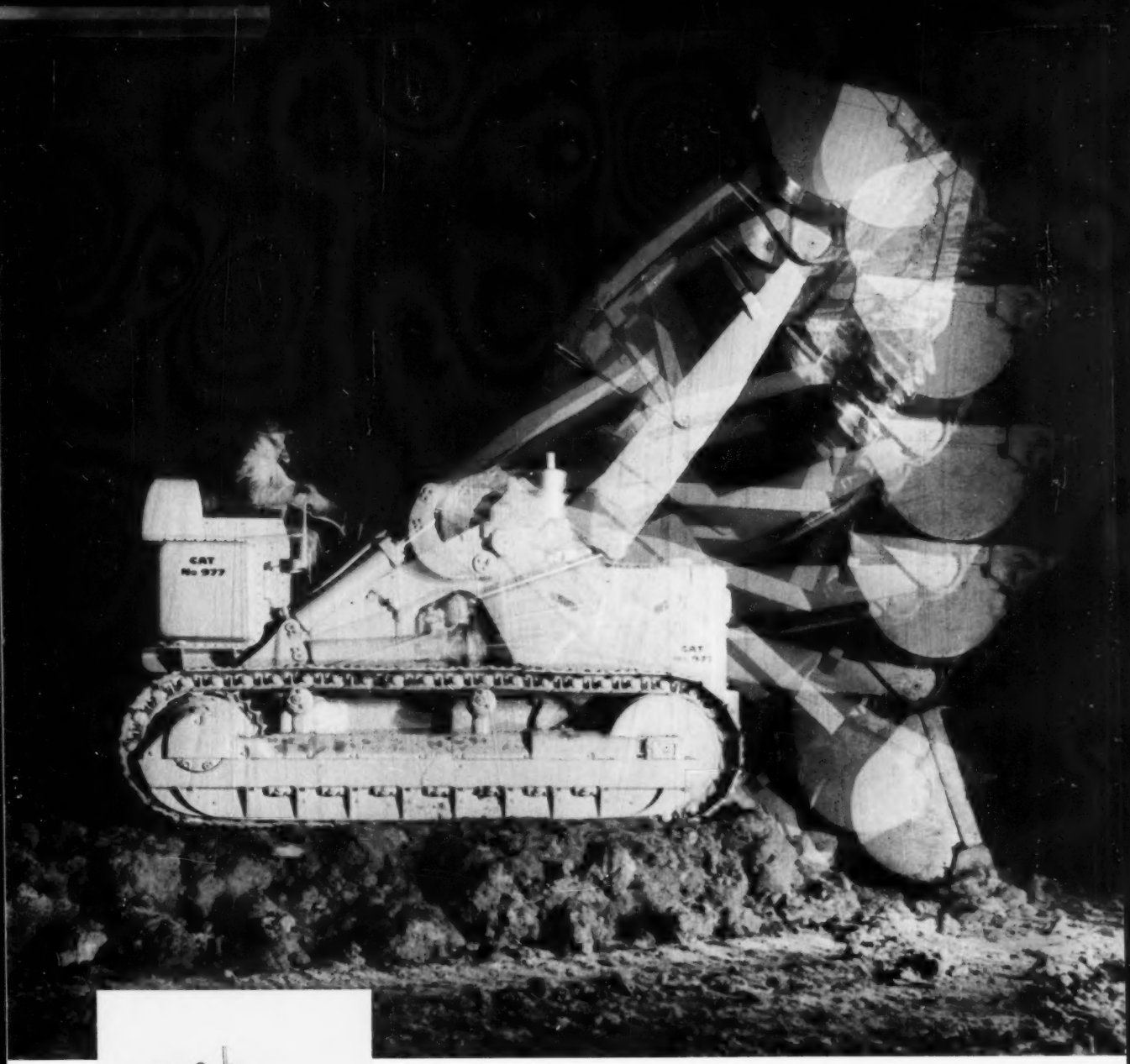
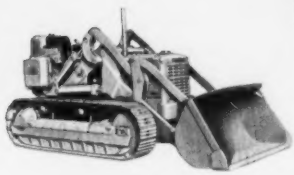
Made To Withstand High Drilling Speed, Whip And Torsional Strain Of Electric Drills

Drills holes faster— Will not snap off shank or chip points— Outlasts four or five ordinary augers.

THE SALEM TOOL COMPANY SALEM, OHIO, U.S.A.





CAT* No. 977
TRAXCAVATOR*

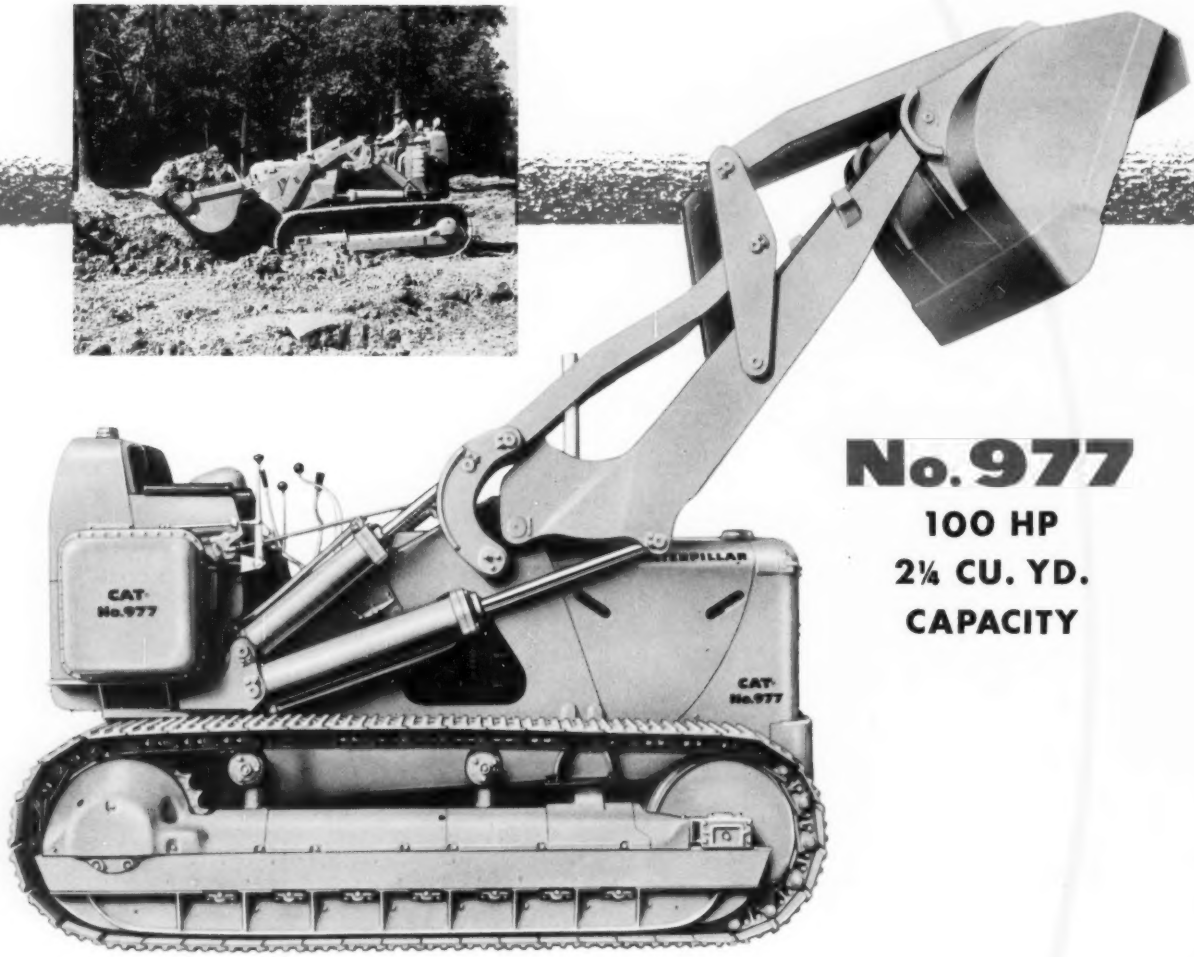
FOR BIG PRODUCTION . . . LOWER COSTS . . .
A NEW 2¼ CU. YD. EXCAVATOR-LOADER:

A message from your Caterpillar Dealer →

THE MOST PRODUCTIVE TRAXCAVATOR EVER BUILT!

CAT No. 977
TRAXCAVATOR

6 NEW FEATURES... Plus the long-life Oil Clutch!

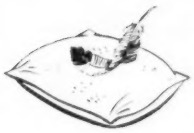


No. 977
100 HP
2¼ CU. YD.
CAPACITY

Your Caterpillar Dealer is proud to present the new Cat No. 977 Traxcavator. Biggest of all Traxcavators, the No. 977 gives you 6 totally new features . . . plus the popular, long-lived oil clutch. Here are some of the reasons why the No. 977 out-produces anything you've ever seen: a 40° tip-back bucket... new, easy-to-service full-flow hydraulic filters . . . new dumping clearance . . . a new, adjustable, automatic kick-out bucket control . . . in-seat starting and bucket position indicator.

The No. 977 joins the No. 955 and No. 933 Traxcavators to give you a complete line of excavator-loaders completely designed and built by one manufacturer and serviced by one dealer organization. All of the components: engine, hydraulic system, bucket, oil clutch, controls and track frame are perfectly related to give you exceptional balance and strength for bigger jobs and longer life. Yes, the No. 977 is ready to go. See your Caterpillar Dealer soon. He'll give you a show!

No. 977 COMPONENTS DESIGNED FOR IMPROVED PERFORMANCE!



A PILLOW OF COOLED OIL cushions the contact between clutch plates in the No. 977's exclusive Cat-built oil clutch. Lasts up to five times longer than dry-type clutches. Initial friction is greatly reduced. Shifts are easier, smoother. And the Caterpillar oil clutch requires no adjustments, only a periodic checking of the oil level.

A NEW DUMPING CLEARANCE of 9′ 3⅜″ has been designed into the No. 977 Traxcavator for easy, fast dumping at the stock pile or over truck boxes. Operator looks directly to bucket area from comfortable, foam rubber seat . . . sees both sides of the bucket at the same time. All controls are in easy reach. Bucket controls may be operated with one hand.

MAXIMUM LOADS ARE ASSURED by the new 40° ground-level, tip-back bucket. The 8-foot wide bucket retains a full load by swinging back into a horizontal carrying position when just 24 inches off the ground. Powerful, dependable 100 HP Cat Engine combines with tip-back feature to break out hard or frozen materials.

MODERN HYDRAULIC SYSTEM speeds operating cycle of the No. 977. Vane-type pump is hydraulically balanced, offers sufficient capacity to operate lift and dump cylinders simultaneously. Full-flow filter housing is conveniently located on left hand fender for easy replacement of paper elements.

NOW . . . THE TRAXCAVATOR FAMILY TOTALS THREE!

No. 977 — 100 HP† — 2¼ cu. yd.

Dumping clearance (45° discharge angle)	9′ 3⅜″		
Dumping height (center of hinge pin to ground)	11′ 9½″		
Digging depth (below ground with 5° initial digging angle set at ground line)	13⅝″		
Length	17′ ½″	**Width**	8′
Height	7′ 3¼″	**Weight**	31,795 lbs.

No. 955 — 70 HP† — 1½ cu. yd.

Dumping clearance (45° discharge angle)	8′ 3¼″		
Dumping height (center of hinge pin to ground)	10′ 8″		
Digging depth (below ground with 5° initial digging angle set at ground line)	12¼″		
Length	15′ 1¼″	**Width**	6′ 8″
Height	6′ 10⅛″	**Weight**	21,480 lbs.

No. 933 — 50 HP† — 1 cu. yd.

Dumping clearance (45° discharge angle)	7′ 10 1/16″		
Dumping height (center of hinge pin to ground)	9′ 10½″		
Digging depth (below ground with 5° initial digging angle set at ground line)	10 5/16″		
Length	13′ 10″	**Width**	5′ 10″
Height	6′ 3¼″	**Weight**	15,500 lbs.

†**ENGINES:** Four stroke cycle, valve-in-head Cat Diesels.

STARTING METHOD: Independent gasoline engine with 6-volt electric starting or direct 24-volt electric starting available for all three machines. Either is started from operator's seat.

CATERPILLAR*

*"Caterpillar," Cat and Traxcavator are Registered Trademarks of Caterpillar Tractor Co.

CATERPILLAR UNIT-BUILT TRAXCAVATORS

again demonstrating Caterpillar leadership in action.

FOR A WIDE RANGE OF WORK

No. 955 and No. 933 Traxcavators, announced by your Caterpillar Dealer just a few months ago, are already much in demand by users everywhere for a wide range of excavating-loading work. The No. 955, top, and No. 933, bottom, offer the same advantages as the No. 977. All three machines have the front-end, box-type brace for rigid bucket mounting, 3-grouser track shoes for greater traction and new bucket position indicator.

WANT TO

SAVE MONEY?

...SEE US!

You can depend on Traxcavators for greatest production with highest savings—and you can also depend on your Caterpillar Dealer to help you get the most from your equipment at lowest possible cost. For example, we carefully and thoroughly inspect your equipment to determine whether critical parts must be replaced or are in condition to continue giving service. This rigid inspection of your Cat-built equipment is just another reason why it always pays you to bring your service problems to your Caterpillar Dealer.

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Do You Know?

• Trial by jury, although cherished as a fundamental right by most Americans, is an outmoded relic of the thirteenth century and is not appropriate for the present-day administration of justice.

This is the charge of Prof. Charles L. Newman of Florida State University here in a report to the Journal of Criminal Law, Criminology and Police Science.

Historically, trial by jury was intended to replace the older trial by oath, trial by ordeal and trial by battle. In the trial by oath, the defendant repeated a set form of words presenting his defense and this was bolstered by the oaths of "oath helpers." It was not necessary to testify to the facts.

In the trial by ordeal the accused might be made to walk blindfolded among red-hot plowshares or to plunge his arm into boiling water.

Both trial by oath and trial by ordeal were of Anglo-Saxon origin and the latter was a survival, probably, of ancient heathen appeals to the god of fire or water, Prof. Newman explained.

Trial by battle was introduced by the Normans and was never very popular with the English.

Trial by a "jury of peers" was designed to meet the needs of a non-urban, agricultural society. Originally, the jury was a group of neighbors who personally knew the accused and the circumstances of the alleged crime.

But times have changed since the days of our great grandparents, Prof. Newman points out.

Then, when a man walked out of his house, every man or woman encountered was known by face, occupation, family and antecedents. Today it is possible for an urban dweller to walk for an hour, a day, or a week without seeing a familiar face.

A jury, as selected today, lacks the training and natural ability to render a wise verdict.

"The average juror is swayed by the emotion and prejudice of his heredity, background, training (and how often, his breakfast)," Prof. Newman declares.

The jury's attitude toward the accused can vary with the type of charge, he indicates.

When the "indictment is for violation of one of the multitude of regulatory statutes, it is not impossible that the jurors can see themselves in the dock and sympathize with the defendant," he said. "Where the defendant has pulled off a fraud on big business, the jurors may regard him as a hero."

In terms of trial process, court decisions are still based upon precedent established in the Middle Ages, often without sufficient reference to the findings of modern sociology, psychology and psychiatry, he concludes.

If it must be that the technique of trial by jury is to be maintained, the legal profession might well consider the introduction of new techniques in the selection of jurors, he recommends.

Here and There in the Coal Industry

J. E. OSMANSKI

● Mr. J. L. Hamilton, Vice President in Charge of Operations, Island Creek Coal Company, announced today the appointment of Mr. J. E. Osmanski as Manager of Personnel. Mr. Osmanski was Director of Personnel at Crucible Steel Company of America in Pittsburgh, Pennsylvania before coming to Island Creek. Prior to his employment with Crucible, he was an Associate Professor of Industrial Psychology at Penn State University. At Island Creek he will be responsible for executive and technical recruitment, management training and development, salary administration, and personnel policies.

Mr. Osmanski attended Haverford College and the University of Hawaii, from which he holds his Bachelor's and Master's degrees. He has had specialized personnel and psychological training at Stanford University and the University of Chicago, and is currently a Doctorate candidate at the University of Pittsburgh.

Mr. Osmanski is not new to the coal industry, having lived for several years in the anthracite regions of Pennsylvania.

Mr. and Mrs. Osmanski and their three daughters will reside at 702 Coolidge Street, Holden, West Virginia.

● Mr. H. L. Miller has joined the Harold C. Lusk Company as Sales Representative for the Southern West Virginia, Eastern Kentucky and Virginia territory.

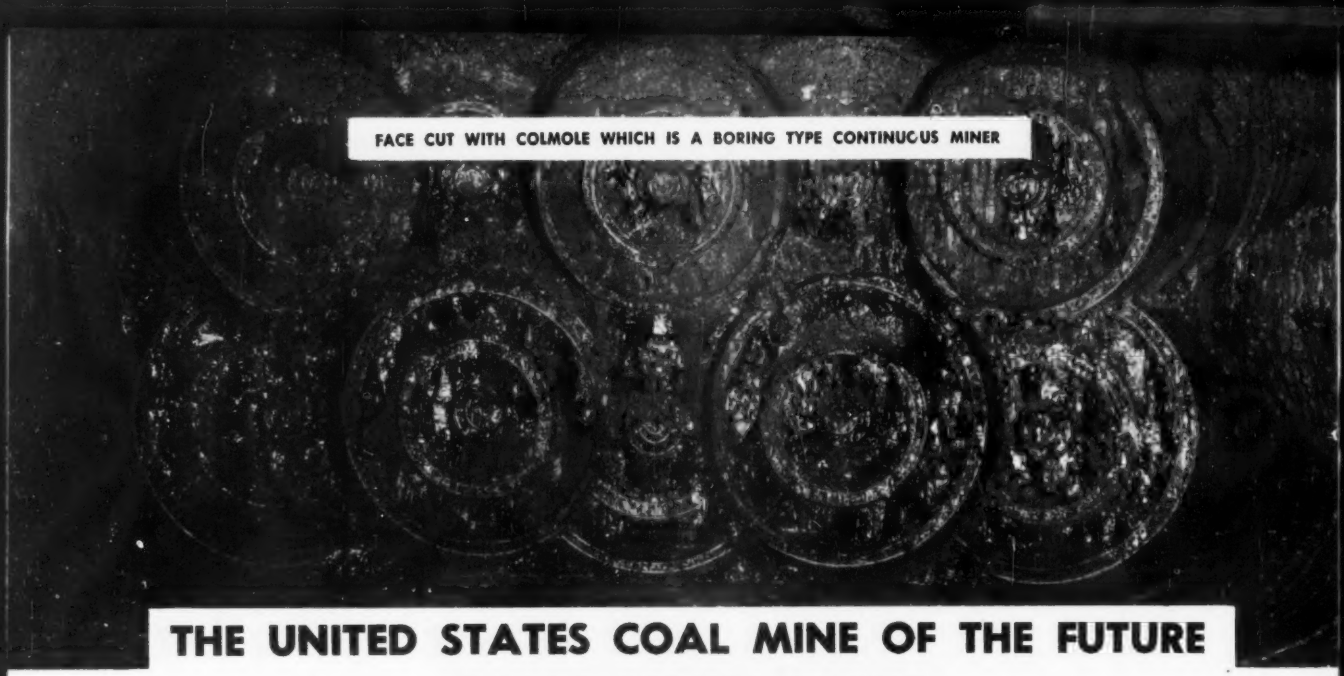
Mr. Miller is a veteran of both World War II and the Korean Conflict and was educated in the public schools of Madison, West Virginia and attended Marshall and Morris-Harvey College.

Mr. Miller lives at 5210 Kentucky Street, South Charleston 3, West Virginia. Telephone: Poplar 8-6258.

● GEORGE W. McCAA has been appointed general manager of Hanna Coal Co., Ohio subsidiary of Pittsburgh Consolidation Coal Co. His immediate assignment will be the development of a new Hanna mine in the vicinity of Cresap, W. Va. A former employee of Pittsburgh Consol, Mr. McCaa returned to that organization in 1954 when it acquired the properties of the Jamison Coal and Coke Co., of which he was general manager.

● J. W. Bloomquist, Sales Manager of Euclid Division, General Motors Corporation, has announced the appointment of Ray C. Call Company of South Charleston, West Virginia as authorized dealer for the complete line of Euclid earth moving equipment. The territory covers all of West Virginia except the counties of Brooke, Hancock, Marshall, Ohio, Morgan, Berkeley and Jefferson—and includes Garret and Allegany counties in Maryland.

In addition to Euclid, the company represents Detroit Diesel, Le Roi, and other well known construction equipment lines. Located on U. S. Route 60, Ray C. Call Company maintains complete parts and service facilities and an experienced staff of equipment personnel. Ray C. Call is President and Everett C. Call is General Manager. J. H. Bentley and J. R. Moody head the service and parts department respectively.



FACE CUT WITH COLMOLE WHICH IS A BORING TYPE CONTINUCUS MINER

THE UNITED STATES COAL MINE OF THE FUTURE

FALL MEETING OF THE PITTSBURGH COAL MINING INSTITUTE

Expanding technology and industrial advancement has brought culture and social progress never before achieved on this earth. Technology is bringing benefits to everyone regardless of his profession. Our human and physical resources, under a democracy, have given us industry that is performing production miracles. The force called technology, bringing together machinery and equipment, skills and techniques, men, money and methods, is a most powerful force in the world; transforming men into giants and poverty into wealth. Technology derives its dynamic force from the flow of human initiative and human imagination, shaped and developed in the careful training of the human mind.

The complexity of industry is increasing and requires specialization by the worker which, in turn, requires more highly trained experts to teach the worker. Those highly trained experts will have to come from our universities and will have to have a potential for broad leadership. There is not enough of the highly trained experts to fill vacancies that exist now and the demand is growing every day.

Automation of our industry cannot take place any faster than the upgrading of necessary skills of the workers. Despite the fact that present management has repeatedly been urged, for more than ten years, to prepare for technological progress, the present shameful unpreparedness has been allowed to develop. In the meantime

(Continued on Page 19)

OVERALL VIEW OF A COLMOLE LOADING ONTO JEFFREY MOLVEYOR

JEFFREY MOLVEYOR TRANSPORTING TO BELT CONVEYOR

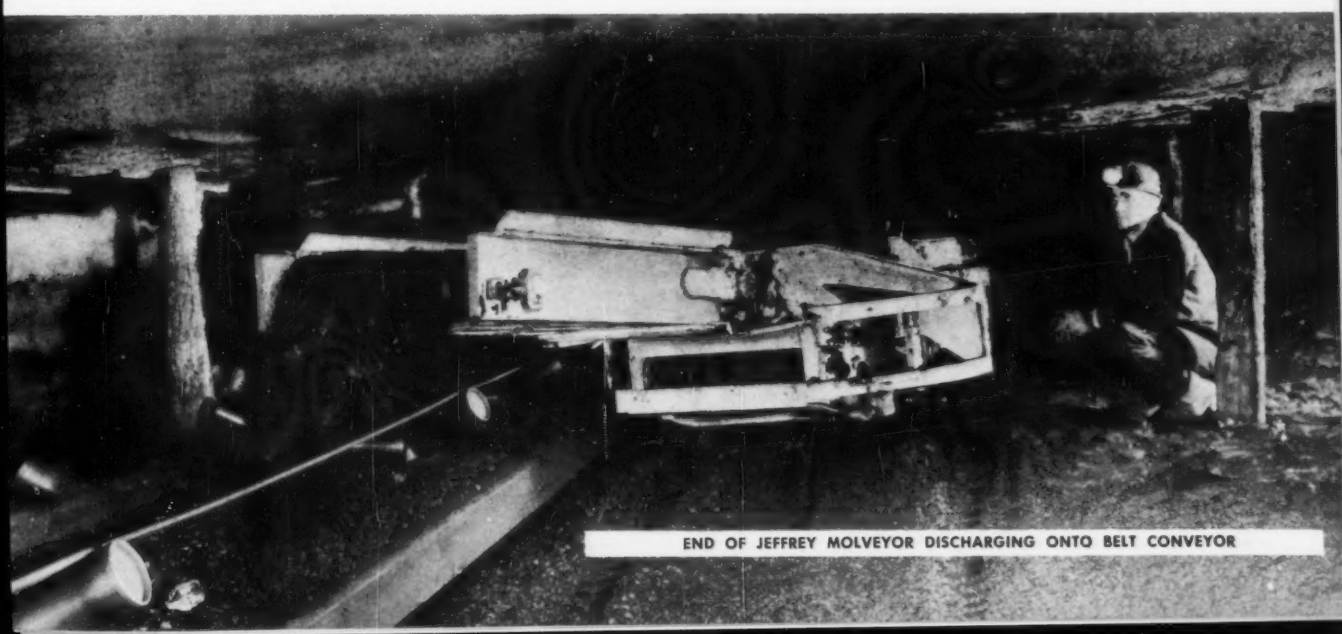
J. W. WOOMER,
Consulting Mining
Engineer, Presents His Paper

W. E. HESS,
Manager of Mines
Jones & Laughlin Steel Corp.

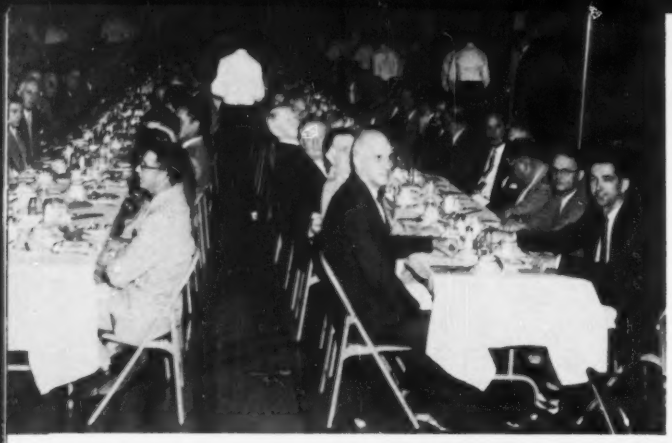
OLIN CONRAD,
Mine Inspector
Another Speaker
At The Meeting

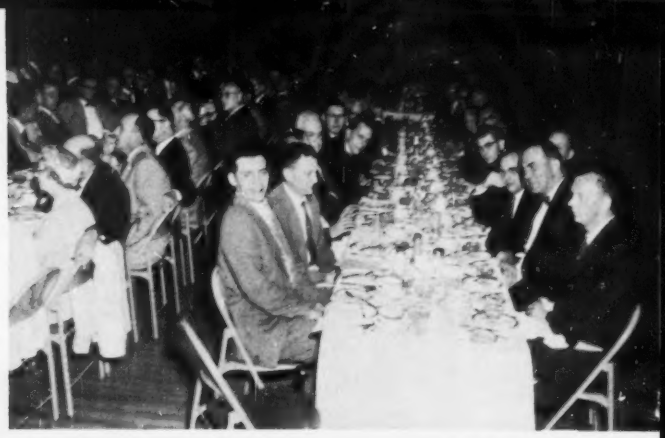
E. R. COOPER,
General Manager Mines
Jones & Laughlin Steel Corp.,
Also Spoke

J. A. BROOKES,
General Manager Mines
Pichards, Mather & Co.
Also Addressed The Meeting



END OF JEFFREY MOLVEYOR DISCHARGING ONTO BELT CONVEYOR



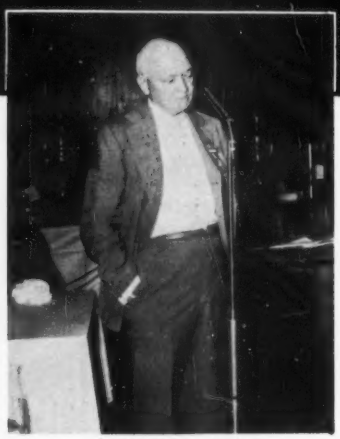


THE SEMI-ANNUAL NATIONAL FIRST AID SERIES

MINE RESCUE CONTEST

(THE WORLD SERIES OF FIRST AID CONTESTS)

J. J. Forbes, Director U. S. Bureau of Mines, addressing the banquet.



Major Percy Tetlow, Asst. to the President, United Mine Workers of America, addressing banquet audience.

Harry Gandy, Jr., Nat'l Coal Assn., substituted for Tom Pickett.

Presentation of first-place award to first-aid team, Gary District (team No. 1) U. S. Steel Corp., Gary, W. Va., National First-Aid and Mine Rescue Contest, Knoxville, Tenn., October 10-12, 1955.

Presentation of second-place award to first-aid team, Palmer Mine, U. S. Steel Corp., Uniontown, Pa. National First-Aid and Mine Rescue Contest, Knoxville, Tenn. October 10-12, 1955.

Nature is patient and mistakes count only when they have helped bring about a correct answer to the problems of living and the welfare of man.

In industry a man's problems and his welfare are integrated with problems and the welfare of his fellow man. Because of the dangers inherent in the coal mining industry an individual workman is inseparable from his fellow man.

Accident risks in industry are many and occupations are now recognized as the first in causing accidental disability. In a partnership as closely knit in this country as are capital and labor today, any man hours of work lost through injury are a direct steal from the purse of labor as well as from capital. It behooves labor as well as it does capital to take action for proper safety training and for quick recovery of an injured worker, for that not only will cut accident frequency and the cost of getting well but will save needless suffering. It is almost criminal for industry not to supply the best available safety training and equipment or for the individual worker not to take full advantage of such training and equipment to prevent accidents. Neglect on the side of industry denies the worker the proper training to prevent safety or the required treatment he is entitled to in case of an accident.

One hazard in industry which has received special scientific emphasis lately is noise. Due to noise warnings of impending danger are not heard, efficiency is lowered, more energy is needed to do the job and more errors are made. Better engineering and design to silence machinery is badly needed.

Another problem that falls in the catagory of safety is the growing necessity for health-centered rather than disease-centered medicine to carry on preventative rather than curative medical progress in industry. At the moment the exact nature, depth and substance of the industrial health problems are not known. It is being realized more every day, however, that the general health of the worker is important to efficient and continuous performance of his duties. Well and able workers must be kept well and able to keep on performing their duties. Sudden lack of certain chemicals in the diet have been found to produce profound changes in personality as well as in emotional disturbances which bring on negative attitudes and accident proneness. Study of the effects of childhood diseases on adult life may throw light on individual attitude toward safety and outlook toward fellow workers.

The Semi-Annual National First Aid and Mine Rescue Contest (World Series of First Aid Contests) was held at Knoxville, Tenn. last October 10 and

(Continued on Page 19)

Mine rescue team, Hendrix mine, Consolidation Coal Co. (Ky.), Jenkins, Ky., preparing to enter mine to work a problem. National First-Aid and Mine Rescue Contest, Knoxville, Tenn. October 10-12, 1955.

Presentation of second-place award to mine rescue team, Price mine, Inland Steel Co., Wheelwright, Ky., National First-Aid and Mine Rescue Contest, Knoxville, Tenn., October 10-12, 1955.

Number 2 team from the Glen Castle No. 6 Mine of the Hanna Coal Co., Ohio, won first place in the combination mine rescue and first aid contest.

Third place in the first aid contest was won by this team from the Gary, W. Va. mine of the U. S. Steel Corp., They are left to right: Charles Jones, Earl Harriston, Robt. Rosenbalm, James Wade, Robt. Long, Captain, Wesley Callahan, Paige Gentry.

PENNSYLVANIA STATE BITUMINOUS
FIRST AID CONTEST

The Pennsylvania Bituminous First Aid Contest was held at Carmichaels, Pa. High School grounds this year. This contest was sponsored by the Pennsylvania Bituminous Coal Operators, the United States Bureau of Mines and the United Mine Workers of America.

The following tabulations are the result of the meeting.

RECORDERS SHEET OF THE

PENNSYLVANIA STATE FIRST AID MEET HELD AT CARMICHAELS, PA. ON SEPTEMBER 10, 1955

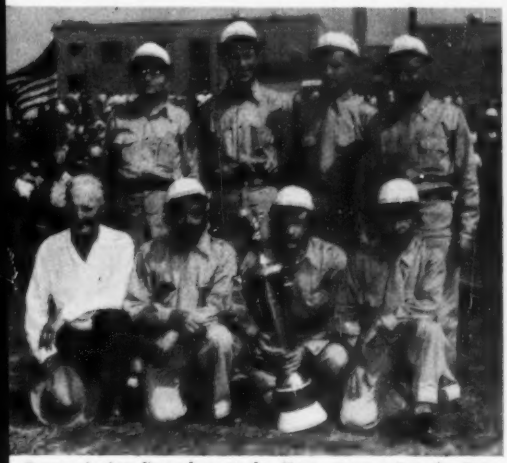
OSCAR F. SPENCER — J. W. HUNT — MYLES E. ALTIMUS, JR. — D. C. JONES

Team	Captain	Problem Discounts 1	2	3	4	5	Score Disc.	Score Points	Per Cent	Rank (Tent.)	Rank (Final)
14. Sonman Mine, Eastern Gas & Fuel Asso's	Frank Frytak	1 (1)	7 (8)	2 (10)	1 (11)		11	1989	99.450	1	1
15. Mathies Mine, Mathies Coal Co.	Joseph Hebda	0 (0)	7 (16)	9 (16)	0 (16)		16	1984	99.200	2	2
1. Cardiff Mine, Imperial Coal Co.	L. D. Kimmel, Jr.	4* (4)	6 (10)	3 (13)	4 (17)		17	1983	99.1502	3	3
19. Mather Mine, Mather Collieries Co.	Harry Crable	6* (4)	4 (10)	5 (15)	2 (17)		17	1983	99.1501	3	4
9. Palmer Mine, U. S. Steel Corporation	J. Ray St. Clair	8* (8)	2 (10)	7 (17)	0 (17)		17	1983	99.1500	3	5
11. Renton Team No. 1, Renton Coal Co.	George Traux	2 (2)	13 (15)	4 (19)	0 (19)		19	1981	99.050	6	6
2. Indianola Mine, Republic Steel Corp.	Vince Stanek	10 (10)	4 (14)	2 (16)	4 (20)		20	1980	99.000	7	7
3. Robena Slope, U. S. Steel Corporation	Stanley Verona	0 (0)	20 (20)	4 (24)	0 (24)		24	1976	98.800	8	8
7. Kramer Mine, Northwestern Min. & Ex. Co.	Guerino Shannon	8 (8)	10 (18)	4 (22)	4 (26)		26	1974	98.700	9	9
12. Warwick Mine, Duquesne Light Co.	Duane Ridgeway	10 (10)	8 (18)	1 (19)	8 (27)		27	1973	98.650	10	10
6. Westland Mine, Pittsburgh Coal Co.	Edward Rettinger	17 (17)	10 (27)	4 (31)	2 (33)		33	1967	98.350	11	11
18. Hutchinson Mine, Westmoreland Coal Co.	Nick Maruschak	8 (8)	16 (24)	8 (32)	2 (34)		34	1966	98.300	12	12
17. Springdale Mine, Allegheny-Pgh. Coal Co.	J. A. Waitkus	3* (3)	17 (20)	11 (31)	6 (37)		37	1963	98.1501	13	13
8. Jamison 21 Mine, Jamison Coal & Coke Co.	Steve Rusnock	6* (6)	6 (12)	15 (27)	10 (37)		37	1963	98.1500	13	14
16. Ernest Mine, Rochester & Pgh. Coal Co.	Richard Patterson	10* (10)	13 (23)	6 (29)	10 (39)		39	1961	98.0501	15	15
4. No. 5 Mine, Pennsylvania Electric Co.	John J. Kruck	21* (21)	7 (28)	7 (35)	4 (39)		39	1961	98.0500	15	16
10. Kent 2A Mine, Rochester & Pgh. Coal Co.	W. W. Thompson	8 (8)	19 (27)	9 (36)	11 (47)		47	1953	97.650	17	17
5. Mine No. 72, Bethlehem Collieries Corp.	Walter Vedock	32 (32)	16 (48)	12 (60)	12 (72)		72	1928	96.400	18	18

*Scores used to break ties.

Over-all view of the field at Carmichaels.

The band and grandstand at Carmichaels.



Team winning first place at the Meet, representing the Sonman Mine of the Eastern Gas & Fuel Assn. They are: kneeling, J. B. McCarty, Director of Safety, John Mitchell, Frank Frytak, Captain and holding cup, Joseph W. Stombaugh, Standing, Joseph Yacisin, Joseph Pamula, William Trexler, Elmer Page.

D. J. Keenan, Director and general chairman.

Team winning second place, representing the Mathies Mine, Pittsburgh Consolidation Coal Co., kneeling left: Captain Joseph Hebda, Francis Williams, Louis Fofolt. Standing: John Contenti, Matt Olexa, Art Shanks, William McCracken.

Left: Lewis E. Evans, Deputy Secretary, Dept. of Mines, Penna., Joseph T. Kennedy, Secretary, Dept. of Mines, Penna., Steve McCann, Crucible Fuel Co., Frank Waggett, at present unattached.

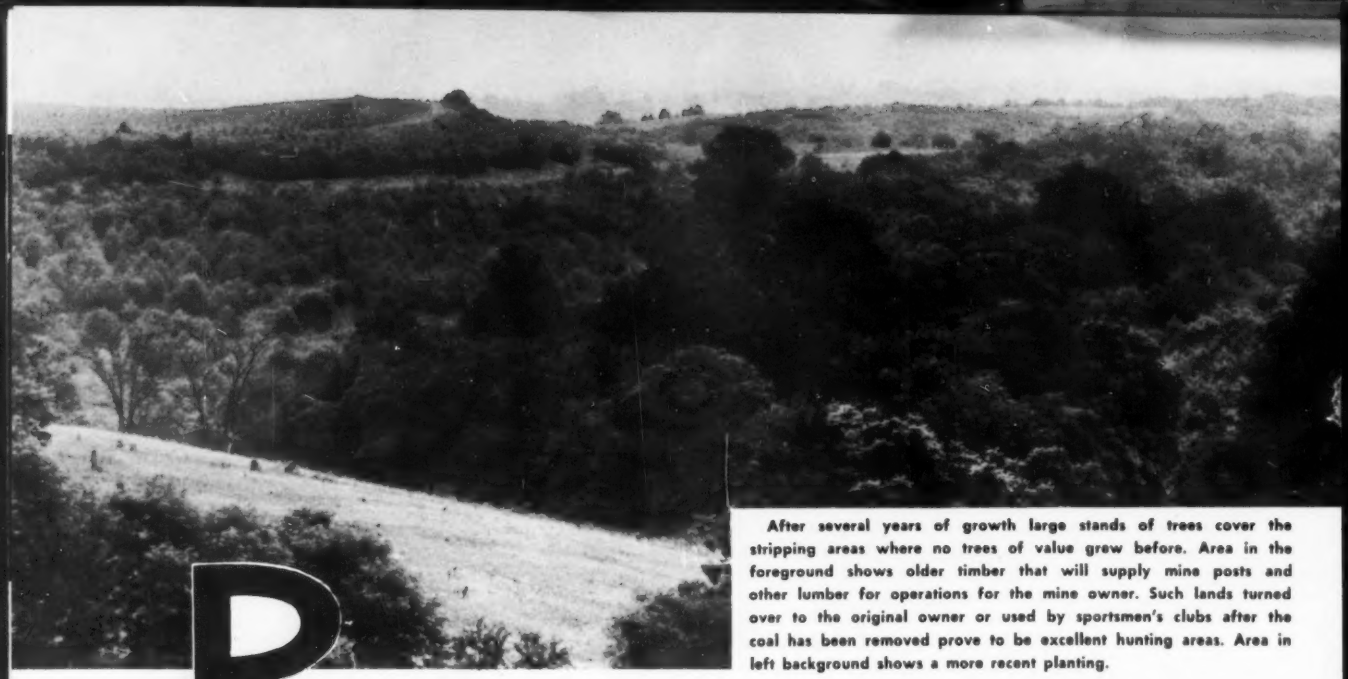
Joseph Hebda, Captain of the Mathies Mine team receiving second place cup.

Left; Bill Stevenson, Mgr. Mines, Hillman Coal & Coke Co., Henry Rose, Pres. Pittsburgh Coal Co. A. E. Siemon, Div. Supt. Hillman Coal & Coke Co., Bill Hess, Mgr. Mines, Jones & Laughlin Steel Corp., somebody's kid getting a great kick having his picture taken.

Left: Jack Boyle, Director Safety, G. H. Sanook, Director Mine Inspection; John Rekus, in arge of plant protection; M. B. Girod, Supt. bena Mine, all with the U. S. Steel Corp. and M. Black, Penna. Dept. of Mines.

Left: D. C. Jones, Dir. Mining Extension Services, Penna. State University, O. A. Schwamke and H. S. Jamison, Hulburt Oil & Grease Co., Myles E. Altimus, Asst. Dir. Mining Extension Service, Penna. State University.

Left; C. M. Donahue, Mine Safety Appliances Co., J. A. Younkins, Asst. Gen. Supt., and J. E. Elkin, Gen. Supt., Duquesne Light Co. mines, J. A. Brookes, Mgr. Mather Collieries.



After several years of growth large stands of trees cover the stripping areas where no trees of value grew before. Area in the foreground shows older timber that will supply mine posts and other lumber for operations for the mine owner. Such lands turned over to the original owner or used by sportsmen's clubs after the coal has been removed prove to be excellent hunting areas. Area in left background shows a more recent planting.

REHABILITATION OF STRIPPED MINE AREAS

Millions of healthy, valuable young trees are growing today in Pennsylvania and Ohio as part of a new era in reforestation introduced by the strip miners of the nation's biggest producing area of stripped coal. Improved game habitat, increased underground water supply, and the prevention of erosion on thousands of acres resulted from reclamation efforts made by mining companies throughout the two states.

This new era of forestry development has been growing in the past several years as a direct result of strip mining millions of tons of coal. When huge stripping shovels or draglines remove the earth covering the coal seam, this material is left in giant piles or banks in the wake of stripping operations. The grading of these banks to give the stripped out land a gently rolling surface has initiated a new era of tree planting on countless acres in the two states.

Credit for the success of many of the plantings must go to the Ohio Reclamation Association and its membership consisting of almost 50 per cent of the strippers in Ohio, mining 75 per cent of the tonnage in the state. Mr. Larry Cook, executive director of the association, describes the work of the organization this way. "We perform mapping and planting at cost. We make a land use study that includes the history of the land, markets in the area, use of the surrounding area, and a study of what the land will do, then advise members on reclamation."

Records of the Ohio Division of Forestry show purchases of seedlings from state nurseries by coal companies since 1910. In 1937 and 1938 planting by a coal company in Jefferson County led to the formation of the Ohio Reclamation Committee, forerunner of the Ohio Reclamation Association. In 1945 with the organization of the ORA, the association entered into a cooperative agreement for research on the reclamation of stripped land with the Central States Forests Experiment Station of U. S. Forest Service. The association also inaugurated a Plant-A-Tree arbor day program in which they sent trees for planting to the schools in the mineral area of Ohio. This project was taken over by the Ohio Forestry Association in 1950.

Actually over 16 million trees have been planted by the association on over 18,000 acres of reclaimed strip mine spoil since the organization's inception in 1945.

At the present time the ORA is planting 25 percent locust on spoil bank areas. In Ohio, tree growth on spoil banks is approximately one-third locust due to the heavy plantings of this specie on ungraded spoils prior to the enactment of a law in 1952 requiring strip miners to reclaim areas affected by mining operations. Other species currently predominant in the Ohio Reclamation Association planting program are ash, oak, maple, sycamore, and poplar. Pines used in the plantings include jack, pitch, short leaf and douglas fir planted for cutting as Christmas trees.

Large track-type tractors such as this Cat D8 Tractor are used almost exclusively by strip mine operators in the grading of stripping spoil for eventual planting in trees or grasses. Here the unit breaks down the peaks at the U. S. Coal Company, Flushing, Ohio.

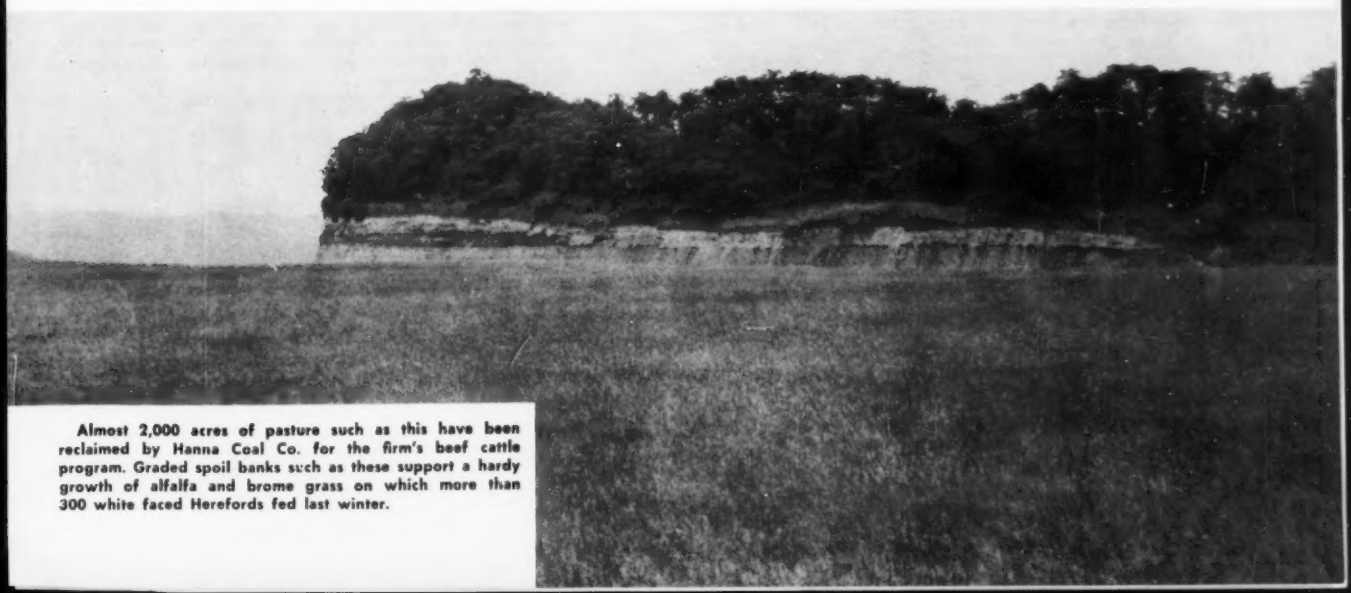
Large track-type tractors such as this Cat D8 Tractor are used almost exclusively by strip mine operators in the grading of stripping spoil for eventual planting in trees or grasses. Here the unit backfills at the Harmon Creek Coal Corporation, Burgettstown, Pa.

Tree planting on strip land has shown a survival rate of approximately 85 per cent. In some cases cottonwoods, planted on spoil banks, have shown more than an inch of diameter growth in a year's time.

Perhaps the biggest single obstacle to successful planting on reclaimed soil can be the presence of a low pH. pH is an indication of the acidity (low pH) or alkalinity (high pH) of the soil. Fortunately only a small percentage of the stripped acreage in Ohio is acid in character, and an even less amount is toxic. The percentage is greater in Pennsylvania due to a difference in overburden in some areas. Where an acid condition exists, it may lead to the planting of trees instead of grasses, although tnis is true only if the area is low in pH, as most growth takes place

(Continued on Page 16)

In the central Pennsylvania coal stripping area the heavy shale and sandrock content of the overburden makes going rough in backfilling operations. Back in the mountains, crawler tractors such as this Caterpillar D8 Tractor owned by DuBois Coal Company, are the only units that can travel the steep slopes and grade the huge spoil banks. The large amount of shale and sandrock in the graded areas makes growth of plantings difficult but large healthy stands of valuable hardwoods still survive on this restored surface.



Almost 2,000 acres of pasture such as this have been reclaimed by Hanna Coal Co. for the firm's beef cattle program. Graded spoil banks such as these support a hardy growth of alfalfa and brome grass on which more than 300 white faced Herefords fed last winter.

These Hereford beef cattle grazing on reclaimed spoil acreage at Hanna's Georgetown Mine have been a highly successful program for the end use of leveled areas. An average gain of 1.66 pounds per animal per day has been reported, a relatively high rate of gain.

(Continued from Page 15)

in land that is acidic rather than alkaline in character. When the pH becomes so low as to become toxic, growth is prevented. Only about five per cent of the stripped land in Ohio is toxic, and even this condition is not permanent, for on much of it the acid oxidizes out of the material and leaches away in a very short time. It is the practice and the requirement of the Ohio law that the final cut be dammed to permit the impoundment of water.

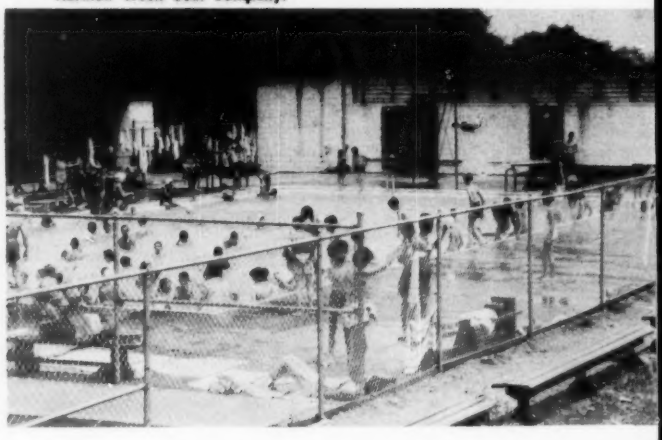
Dr. Charles V. Riley, technical consultant to the ORA, has found that in many farm lakes or ponds formed from reclamation where the acidity from silt shales and sandstones runs high, (a pH of 4 to 4.5) covering the coal seam with water will bring the pH up to 6.5 in 5 to 8 years. The best remedies for an acid condition have been the covering of the coal seam with three feet of earth or bringing the water level above the seam in strip mine lakes. According to Riley, marcasite present as thin layers in the coal or as crystals in the immediate overburden is a major factor in determining how much acid lakes on reclaimed land will have. Natural buffering by materials such as limestone or fossiliferous shale may aid in reducing the effect of marcasite in causing the acid condition.

Damming of the last stripping cut made by mining operations has helped raise the watertable in Ohio and has increased the state's inland water supply. Twenty lakes on reclaimed lands within a five mile radius have been stocked with fish under the direction of Charles Breeding, field director of the ORA, and Dr. Riley. In one 10½ acre lake 50,000 walleyed pike were stocked last spring. Rainbow trout, bass, bluegill and crappies have also been stocked in these strip mine lakes that average 10 to 12 feet in depth. A total of 15 species of fish have been found in strip mine lakes. Studies by Dr. Riley from 1948 to 1952 revealed 15 species of water fowl utilizing Ohio strip mine lakes while two species, the woodduck and mallard, have been found nesting on such areas. Fur bearers found in marshes adjoining the lakes have included the muskrat, raccoon and beaver.

An example of the forestry pro-

A variety of end uses for reclaimed stripped lands may be found throughout the coal stripping areas of Pennsylvania and Ohio. These grapes are growing in a peach and grape orchard on graded land at Powhatan Mining Co., near Bloomfield, in Jefferson County, Ohio. The orchard was planted in cooperation with the Ohio Reclamation Association on land reclaimed in 1952.

Where these children enjoy a cool summer swim, huge machines were stripping out coal only a few years ago. This pool was built on graded spoil banks donated to the town of Burgettstown, Pa. by the Harmon Creek Coal Company.



grams sponsored by mining companies is the reclamation program at Hanna Coal Company near Cadiz, Ohio, a division of Pittsburgh Consolidation Coal Company. Under the direction of Mr. Edwin Mills, reclamation superintendent at the company's Georgetown Mine, the firm has planted almost 1,400 acres of stripping spoil in trees. This constitutes approximately 21 per cent of the total area reclaimed.

The land is graded to a rolling contour using reverse slope grading. Sixteen Caterpillar D8 Tractors grade the spoils to benches with slopes running 1½ to 1. The slopes are planted in trees and the benches and tops of the banks are seeded to grass. Forestry planting is also employed on all the rougher areas. In 1940 the company started to strip in this area. At that time banks were planted in locust and hardwood mixtures in conjunction with the ORA.

Each year Hanna uses over a million board feet of sawed lumber and over 800,000 mine posts to operate underground mines. Therefore, the planting of trees receives a great deal of consideration in the reclamation program.

At Burgettstown, Pennsylvania, reclamation of stripped land has been accomplished with astounding success by the Harmon Creek Coal Corporation. Although the firm started experimenting in the 1930's with reclamation of the areas from which the company had taken the coal, full scale backfilling was not undertaken until 1944. The first year 50 acres were graded with 14,500 trees planted until today the company has planted over 586,000 trees. Initial plantings were made on the worst possible land with the thought that if these were successful the plantings would grow on any of the areas.

Until 1948 all trees for planting at Harmon Creek were purchased from state nurseries. In that year, however, Mr. W. R. Allison was hired as forester and reclamation foreman. He established a company nursery for the reclamation program where the trees are raised from seed. The tree plantings include both conifers and deciduous types with best results from jack, pitch, table mountain pine and locust. Although the trees have been found to grow better if spoils are allowed to remain unplanted for 2 or 3 years, plantings are made almost immediately in most cases to prevent erosion. Originally the banks were planted solidly with trees but currently plantings are made with a 100 foot strip of grass between each 300 feet of trees as a fire lane. For the fine work accomplished by Harmon Creek the firm was awarded the "Plant America Award" from the American Association of Nurserymen.

In the heavily strip mined central Pennsylvania area the problem of successfully reclaiming stripped land for tree planting is a much more formidable one than that facing coal mining companies in eastern Ohio and southwestern Pennsylvania. In Pennsylvania's Clearfield, Centre, Clinton and adjoining counties the picture is a quite different one and it leaves the coal companies with no small problem in reclaiming land after they have stripped the coal. Growth is very difficult due to the heavy concentration of sandrock and shale in this area.

The amount of reclaimed land planted in trees in the Allegheny areas is considerably more than that in the eastern Ohio and southwestern Pennsylvania areas.

Mr. G. Albert Stewart, executive secretary of the Central Pennsylvania Open Pit Mining Association, Philipsburg, Pa., one of several organizations of strip mine operators, in Pennsylvania, has this to say about tree planting in the central Pennsylvania coal stripping areas. "In many cases the land before stripping grew worthless species of wild cherry, Juneberry, devil's club, aspen and pin oak, all of short life and little value. Where these trees once grew, strip mine operators in this area are now planting valuable species of pine, locust, and other soft and hard woods largely bought from state nurseries. A lot of stripped surface plantings are today more valuable than adjoining acreage growing valueless species."

In this rugged Allegheny mountain area the DuBois Coal Co., Clearfield, Pa., has reclaimed more than 500 acres with two Cat D7 Tractors and one D8 since 1950. Over 400,000 seedlings have been planted including red pine, white pine, spruce and red oak. Due to the rugged terrain the company's reclaimed areas have been planted predominantly in trees. The state has also planted experimental plots on land reclaimed by DuBois. These plots have been planted in 31 varieties of trees and 24 varieties of shrubs. A major problem in grading the areas is the heavy sandrock that frequently remains so large after blasting that it will not fit in the five cubic yard bucket of the firm's 4500 Manitowoc Draglines.

The promise of thousands of acres of new healthy forests lies ahead. Conservationists recognize that millions of trees are growing today on thousands of acres where nothing of value grew before.

Scenic fields, forests and lakes such as this area at Burgettstown, Pa. now dot the Ohio and Pennsylvania countryside where lakes never existed and growth was poor. This park area was donated to the town of Burgettstown by the Harmon Creek Coal Company after coal had been stripped from the area and the spoil banks graded and planted.

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3—Goodman 512 Cutting Machines.

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FALL MEETING OF THE PITTSBURGH MINING INSTITUTE

(Continued from Page 9)

a manufacturer who put several years and one million dollars into developing a machine for an automatic mining system cannot find one mine in this entire country that is ready for it. This kind of deplorable situation leads to only one conclusion; our industry has too many timid and backward minds that need to be replaced by sound forward-looking, fearless minds, to bring coal back to its righful competitive position.

At the Fall Meeting of the Pittsburgh Coal Mining Institute, held in the Steele Auditorium of the State Teachers College, California, Pennsylvania, an outline of the United States Coal Mine of the future was presented by J. W. Woomer, Consulting Mining Engineer of Wheeling, West Virginia, who has traveled extensively to all coal producing countries on this earth. One salient point brought out was that the automatically operated mining machine will incorporate the boring-type head rather than the ripping-type. This is understandable since the boring-type machine bores continuously into the whole face of the coal seam, therefore, is capable of producing a much greater tonnage.

The cost of making the coal producing industry fully automatic was placed at from $6,000,000,000 to $8,000,000,000. This gigantic task of financing will have to be underwritten by large banks and leading insurance companies.

The prediction was that power to operate the machinery will be alternating current, 220 or 440 volts. The output will be transported to the surface by rubber belt. There will be no mine cars.

In connection with production of the future it was estimated that about 650,000,000 tons would be produced by 1966 with about the present number of workers. Instead of what is called a miner today, will be a skilled mechanic maintaining the automatic equipment. Since predictions are being made, personally, I do not believe it will take one-third the present number of workers to produce 700,000,000 tons annually after full automation is installed.

Nothing was said at this meeting about where or how the necessary trained personnel would be obtained. My present personal opinion is that if the industry can obtain the barest top skill for supervision and can borrow trained skill from the manufacturer of electronic devices for long enough periods to train sons of our present miners, it will struggle through the early period of automation, then, later, will have an abundance of needed workers as the coal producing industry has always been blessed with ingenuity, sometimes crude and primitive ingenuity, but always enough of the right kind to get the job done.

FIRST AID CONTEST MINE RESCUE CONTEST

(Continued from Page 11)

12. Fifty-five First Aid and Mine Rescue and combination teams competed in the contest. First place in the first aid competition was won by the Number One Team of the Gary, West Virginia Mine of the United States Steel Corporation. Second place was won by the team representing the Palmer Mine of the Frick Division, United States Steel Corp. and third place went to the Number Two team of the United States Steel Corp., Gary, West Virginia.

Six teams competed in the Mine Rescue Contest and the team from the Hendrix Mine, Consolidation Coal Co. (Ky.) won first place. This team was sponsored by the Big Sandy-Elkhorn Coal Mining Institute.

The combination First Aid and Mine Rescue competition consisted of 3 teams and that contest was won by the Number Two team, Glenn Castle Mine, Hanna Coal Co.

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"CERTIFIED BUY" $6600.00

ITEM 955-P366 — Caterpillar D4-HT4 Hydraulic Hylift. Reconditioned starting engine. Rebuilt diesel engine cylinder head. Installed new ring and bushings and seals in hydraulic pump; rebushed lift and tilt arms at bucket. Installed new cutting edge on bucket. Installed new bottom rollers, new sprockets, new idlers and bellow seals. F.O.B. Pittsburgh, Pa.
"CERTIFIED BUY" $6800.00

ITEM 955-WV159 — Caterpillar D7 Tractor mounted w/LaPlant-Choate Angledozer and LeTorneau D.D. Cable Control. This unit was just returned from a one month rental. Prior to rental, we installed new master clutch brake, rebushed steering control lever and relined cable control cone. Unit is in good running condition. F.O.B. Clarksburg, West Va.
"BUY AND TRY" $5000.00

ITEM 1055-E177 — Caterpillar D4-HT4 Tractor. 2200 Hours on Tractor. Tracks are repinned, new idlers. Our shop has repaired steering clutches and brakes. Tractor has had excellent care and maintenance. F.O.B. Erie, Pa.
"CERTIFIED BUY" $7500.00

ITEM 855-P352 — Caterpillar D6-T6 Hylift with 1¾ yd. Bucket. Installed new ring gear on flywheel, overhauled bendix and starting engine, replaced two bottom rollers, reconditioned master clutch, radiator and oil cooler. F.O.B. Pittsburgh, Pa.
"CERTIFIED BUY" $4500.00

ITEM 155-E178 — Caterpillar D4 Tractor equipped with 4A Bulldozer and #44 Hydraulic Control. 16" Tracks, large idlers, crankcase guard, electric starting system on pony engine. Tractor and bulldozer are in very good condition and has had excellent care. F.O.B. Erie, Pa.
"CERTIFIED BUY" $5900.00

ITEM 1054-C175 — Int. T9 Gasoline Tractor, mounted with Bucyrus-Erie Hyd. straight blade, S/N TCB34336-T7BKC — Track roller guards, New paint and decals. F.O.B. Clearfield, Pa. **"BUY AND TRY" $3500.00**

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1400 P&H 4 yd. electric shovel
111-M Marion 3½ yd. diesel shovel
4161 Marion 5 yd. electric shovel. Worked about three years.
1201 Lima 3½ yd. diesel shovel
1201 Lima Hi-Lift diesel shovel 42' boom, 32' stick, 2½ yd. dipper.
1201 Lima Semi-Hi-Lift diesel shovel, 36' boom, 27' stick, 3 yd. dipper
3500 Manitowoc Hi-Lift diesel shovel 45' boom, 35' stick, 2 yd. dipper
111-M Marion Hi-Lift diesel shovel 43' boom, 23' stick, 3 yd. dipper
40-A Marion Hi-Lift diesel shovel 45' boom, 34' stick, 2½ yd. dipper.
450-W Bucyrus-Erie diesel dragline 165' boom, 13 yd. bucket
625 Page diesel dragline 150' boom, 9 yd. bucket
5-W Bucyrus-Erie diesel dragline 125' boom, 5 yd. bucket
2400 Lima diesel dragline 130' boom, 5 yd. bucket.
4500 Manitowoc diesel dragline 120' boom, 5 yd. bucket
1055 P&H diesel dragline 80' boom, 4 yd. bucket
1201 Lima diesel dragline 85' boom, 3 yd. bucket. Independent boom hoist.
3500 Manitowoc diesel dragline 85' boom, 2½ yd. bucket
600 Reich Heavy truck mounted rotary air drill
50R B-E Blast Hole Drill—drills up to 12' hole
Quarrymaster Drill with 2-500 cu. ft. compressors
58-BH Joy Champion Rotary Air Drill
56-BH Joy Middle Weight Rotary Air Drill

Also 42-T, 29-T, and 27-T Well Drills

MANY GOOD USED TRUCKS

Frank Swabb Equipment Co. Inc.

313 Hazleton Nat'l. Bank Bldg.
Hazleton, Pa., GLadstone 5-3658

LOADING MACHINES

20—Joy Loaders, all types.
2—Jeffrey 61 CLR on rubber, 26".
3—Jeffrey L-500 Loaders.
2—Goodman 360 Loaders.
4—Myers Whaley No. 3 Automat Loaders.
4—Clarkson Loaders, 26" above rail.

CONVEYORS

10—Jeffrey 61 HG Face Conveyors.
6—Jeffrey 61AM Room Conveyors, 300 ft.
2—61EW Elevating Conveyors.
2—61WH 15" Room Conveyors, 300'.
3—Joy 30" Belt Conveyors, 10 to 40 H.P.
4—Joy Ladel UN-17 Shakers.
10—Goodman G-12½ and G-15 Shakers.

CONVERTERS AND DIESEL PLANTS

3—100KW, G.E. TCC-6's, 250 volt Rotary Converters.
3—150KW, G.E. HCC-6's, 250 volt Rotary Converters.
1—200KW G.E. HCC-6 Rotary Converter.
1—300KW Westinghouse Rotary Converter. (all the above with 6900/13000 and-or 2300/4000 primary transformers.)
1—200KW Westinghouse portable Rectifier.
2—150KW MG Sets, G. E. and Westinghouse.
1—200 KW MG Set, Westinghouse.
2—300KW MG Set, Westinghouse.
1—500KW MG Set, Westinghouse.
1—Cummins 125KW, 250 volt DC.
1—Allis Chalmers, 200KVA, AC (Natural Gas).
1—700HP Shaft Hoist complete.
Complete steam plant, will sell all or any part.
Boilers, like new, 1100 H.P., 500 H.P. Transformers, Turbines, etc.
Complete Tipples with Cleaning Plants.

ROCK DUSTERS

1—MSA hi pressure on rubber.
1—MSA hi pressure on skids.
1—MSA low pressure Room Duster.
1—Canton Dustributor low pressure.

MISCELLANEOUS

12—Air Compressors 1 H.P. to 40 H.P.
40—Mine Pumps, all types.
Pipe, plastic, steel transite, all sizes 1" to 6".
400 Mine Cars, drop bottom and end dump, all gauges.
150 Mine Cars, 18" high, end dump, 44" gauge.
5—Brown Fayro HKL and HGD Car Spotters.
1—12 ton Differential Slate Larry.
4—Overhead Bridge Cranes.
1—Kanawha Hillside Dump.
1—16 Yd. Dragline Bucket.
5—Low Vein Water Cars.
3—3000 Gal. Tanks, like new.
3—9000 Gal. Tanks.
Incline Hoists, 25 to 50 H.P.
Machine Tools for mine shops.
1000 tons rails, all sizes.
4,000 Ft. 3/c, 5000 volt 2/0 cable.
30 tons copper rolley and feeder.
6 Electric Drills, CP 572.
300 Transformers from 1 to 2000 KVA and 110 to 13000 primary volts.
400 Electric Motors, 3 to 200 H.P.
Suspension Bridge 300 ft. long for river crossings.
1—International TD-18 Angledozer.
1—Allis Chalmers HD-7 Angledozer.
Huge stock of Mine Supplies.

Thousands of other Items
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Euclid Rear Dump Trucks

Model 9W Bucyrus-Erie Dragline, 8 yd.
Model 5W Bucyrus-Erie Dragline, 6 yd.
Model 170B Bucyrus-Erie Hi-Lift Shovel 5 yd.
Model 120B Bucyrus-Erie Shovel & Drag. 5 yd.
Model 200W Bucyrus-Erie Dragline 5 yd.
Model 54B Bucyrus-Erie Dragline 2½ yd.
Model 54B Bucyrus-Erie Shovel
Model 22B Bucyrus-Erie Shovel & Drag
Model 4500 Manitowoc Dragline 5 yd. & 5 yd. shovel
Model 3500 Manitowoc Dragline 2½ yd.
Model 1055 P & H Dragline 4 yd.
Model 1600 P & H Dragline 6 yd.
Model 7400 Marion Dragline 9 yd.
Model 7200 Marion Dragline 7 yd.
Model 111M Marion Dragline & Hi-Lift 3 yd.
Model 4161 Marion Dragline Shovel 5 yd.
Model 2400 Lima Dragline 6 yd.
Model 2400 Lima Hi-Lift Shovel 4 yd.
Model 1201 Lima Hi-Lift Shovel
Model 1201 Lima Dragline 3 yd.
Model 604 Lima Shovel 1½ yd.
Model 80D Northwest Shovel 2½ yd.
Model 6 Northwest Shovel 1½ yd.
Truck Crane—20 Ton with Shovel Front & Backhoe
Caterpillar Graders
Rogers Lowbed Trailers

Let me know your needs in equipment or should you have idle equipment, that you desire to turn into cash: Write me at once.

William Lubrecht, III

Construction Equipment

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Phone Gladstone 5-4041 or 5-0253

Marion 34 Yd. Stripping Shovel, ready to work.
220 ft. 16" Chrome Pipe, Molybedum Schedule 100.
100 ft. 12" Chrome Pipe, Molybedum Schedule 100.
McCarthy Coal Auger 36"—42" Dia.—12' Augers. 12u tt & Head—GM Deisel 6 Cyl.—full hydraulic.
Vibrating Double Deck Screen—5'x14" and a single 4'x10".
Jeffrey 29 V Cutting Machine & Stock Parts.
Jeffrey L600 Loading Machines & Stock Parts.
Goodman 460 Loading Machines & Stock Parts.
Joy 5-SC Shuttle Car, good operating condition.
Coal Recovery Auger, 150 HP—140' of 24" Dia. Auger, full hydraulic.
Jeffrey Coal Mole and Mole Conveyor, 300 feet length.
4500 Manitowac Combination dragline-shovel, Caterpillar engine.
Bucyrus-Erie 54-B Combination Dragline-Shovel.
2 Caterpillar D-8 tractors, controlled.
2 Caterpillar D-8 tractors hydraulic controlled.
McCarthy Highwall blast hole drill on truck.
Lima 802 Combination dragline-shovel.

We Need Joy 11 BV Loader

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Northwest 80-D Shovel

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1 Scottsdale 18" x 40" Double Roll Coal Crusher, powered by two 10 hp. 3 phase motors. **$1,000**

1 18" x 25' Belt Conveyor, driven by 5 hp. 3 phase motor. **$500.00**

1 33"x 10' Plate Feeder driven by 5 hp. 3 phase motor. **$250.00**

THE SMACK COMPANY
NEW STRAITSVILLE, OHIO

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EQUIPMENT FOR SALE

P & H 655B—Shovel #11576
22 ft. boom. 20' sticks, 1½-yd. dipper. Cat engine D-13000

Marion 40A—Dragline #8513
70-ft. boom, 3-yd. bucket. Light plant. New Cummins engine. Good condition.

P & H 955 Dragline #7491
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Marion 111M Shovel #8871
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ATlantic 1-1576

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2400 Hi Lift

Lima 2400—67' boom—50' stick 4 yd. dipper—Caterpillar diesel 9000 hours total service.
4500 Manitowoc—120' boom—5 yd. bucket—Caterpillar diesel.
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313 Hazelton Nat'l Bank Bldg.
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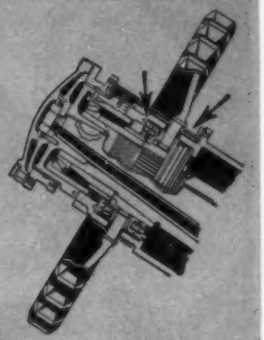

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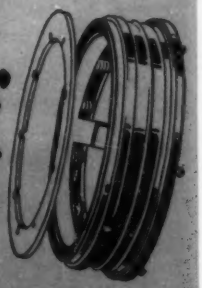

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